I claim:

1. An IV catheter comprising:

a catheter having a wall defining a lumen, a proximal end, and a distal end;

an adapter having a proximal end, a distal end and an internal cavity, said adapter being in fluid communication with the catheter lumen;

a septum positioned within the adapter cavity at the adapter proximal end;

an extension tube extending laterally from the adapter and in fluid communication with adapter cavity;

a tip shield having a distal end, a proximal end and an internal cavity, said shield positioned adjacent adapter proximal end and coaxially aligned with adapter;

a hub having a proximal portion, a distal portion and an internal cavity, said hub positioned adjacent the tip shield proximal end and coaxially aligned with the tip shield;

a cannula having a wall defining a lumen, a beveled distal end, an aperture in the wall of said cannula near the cannula distal end and a proximal end in the shape of a hook, said cannula passing through and coaxially aligned with the catheter, adapter, tip shield and hub.

2. The IV catheter of claim 1 wherein the hook shape of the cannula proximal end has an internal radius and an external radius, wherein the internal radius is less than the external radius.

3. The IV catheter of claim 2 wherein the hook shape external diameter is about .10 inch.

4. The IV catheter of claim 2 wherein the internal radius is offset toward the cannula proximal end.

5. The IV catheter of claim 1 wherein the cannula lumen at the proximal end is crimped closed.

6. A method of forming a needle assembly comprising:
providing a cannula having a sharp distal end and a proximal end;
crimping the proximal end to seal the proximal end;
inserting the cannula into a needle hub such that the proximal end of the cannula is disposed in a glue well of the needle hub;
inserting glue into the glue well; and
curing the glue.

7. The method of claim 6 wherein the needle hub includes a neck having a profile substantially matching the profile of the cannula, and wherein the step of inserting the cannula into the needle hub includes positioning the cannula in the neck in a snug fit.

8. The method of claim 6 further comprising forming the proximal end of the cannula into a hook shape, wherein the step of crimping and the step of forming the hook are performed virtually simultaneously, wherein the crimp is formed by pressing a crimp pin onto the proximal end of the cannula, wherein the crimp is formed by pressing the proximal end of the cannula into a die, wherein the crimp pin is pressed into the proximal end of the cannula as the proximal end of the cannula is pressed into the die.

9. A needle assembly made in accord with the method of claim 6.

10. A method of forming a needle assembly comprising:
providing a needle cannula having a distal end and a proximal end;
inserting the needle cannula into a needle hub;
extending the proximal end of the needle cannula beyond the needle hub;
crimping the proximal end of the needle cannula such that it is sealed and formed into a mechanical interlock at the proximal end;

displacing the cannula distally such that the mechanical interlock is disposed within a glue well in the needle hub;

inserting glue into the glue well; and

curing the glue with UV light.

11. The method of claim 10 further comprising lubricating the needle before inserting the needle cannula into the needle hub

12. The method of claim 10 wherein the mechanical interlock is a hook and crimping the needle comprises:

disposing the proximal end of the needle cannula along a crimping pad; and

moving a crimping tool towards the needle cannula such that the tool forces the cannula onto the pad.

13. The method of claim 12 wherein the crimping tool is a crimping pin, and wherein the crimping pin is moved in a straight line towards the needle cannula.

14. The method of claim 13 in which the crimping pin is moved exclusively in a direction perpendicular to the axis of the needle cannula.

15. The method of claim 13 in which the crimping pin is moved in a direction at a selected angle with respect to the axis of the needle cannula.

16. The method of claim 13 in which the crimping pin is displaced in an arcuate path toward the crimping pad.

17. The method of claim 13 in which a groove is disposed in the crimping pad.

18. The method of claim 17 in which the crimping pin deforms the needle cannula into the groove.

19. The method of claim 18 in which the crimping pin moves with respect to the crimping pad in a path that is either in a direction perpendicular to the axis of the needle cannula, in a direction at a selected angle with respect to the axis of the needle cannula, arcuate toward the crimping pad or a combination of these paths.

20. The method of claim 18 in which the axis of the crimping pin is off set from the axis of the groove.

21. The method of claim 20 in which the axis of the crimping pin is off set proximally with respect to the axis of the groove.

22. A needle assembly made in accord with the method of claim 10.

23. A cannula for a medical needle comprising:

a tubular wall defining a lumen, the wall having a proximal end and a distal end;

wherein the distal end is beveled and adapted for insertion into a patient; and

wherein the proximal end has a hook shape with an internal radius and an external radius.

24. The cannula of claim 23 wherein the hook shape external radius is about 0.10 inch and wherein the internal radius is offset toward the beveled distal end.

25. The cannula of claim 23 wherein a fluid-tight seal is formed in the hook shape.

26. A method of forming a cannula for a medical needle having a hook shape comprising:

providing a cannula having a tubular wall defining a lumen, a proximal end and a distal end;

providing a die;

providing a crimp pin;

positioning the proximal end at the die; and

depressing the cannula proximal end into the die with pressure from the crimp pin.

27. The method of claim 26 wherein the die has a concave shape with a diameter of about 0.10 inch.

28. The method of claim 26 wherein the crimp pin has a radius of about 0.030 inch.

29. The method of claim 26 wherein the centerline of the crimp is offset from the die centerline.

30. A method of forming a medical needle comprising:

providing a cannula having a sharp distal end adapted for insertion into a patient's tissue and a proximal end; and

crimping the proximal end to create a fluid-tight seal at the proximal end.

31. The method of claim 30 further comprising forming the proximal end into a hook shape.

32. The method of claim 31 wherein the step of crimping and the step of forming the hook are performed virtually simultaneously.

33. The method of claim 32 wherein the crimp is formed by pressing a crimp pin onto the proximal end of the cannula.

34. The method of claim 33 wherein the crimp is formed by pressing the proximal end of the cannula into a die.

35. The method of claim 34 wherein the crimp pin is pressed into the proximal end of the cannula as the proximal end of the cannula is pressed into the die.

36. An IV catheter comprising:

a catheter having a wall defining a lumen, a proximal end, and a distal end;

an adapter having a proximal end, a distal end and an internal cavity, said adapter being in fluid communication with the catheter lumen;

a tip shield having a distal end, a proximal end and an internal cavity, said shield operably engaged to the adapter;

a hub having a proximal portion, a distal portion and an internal cavity;

a cannula having:

a wall defining a lumen,

a beveled distal end,

a proximal end including a mechanical interlock, wherein the mechanical interlock is disposed securely within the internal cavity of the hub and the cannula passes coaxially through the catheter.

37. A needle assembly comprising:

a cannula defining a lumen;

a beveled distal end; and

a proximal end having a mechanical interlock;

a hub, wherein the mechanical interlock is disposed in the hub.

38. The needle assembly of claim 38 wherein the mechanical interlock is a hook-shaped member with an internal radius and an external radius, wherein the internal radius is offset with respect to the external radius toward the cannula distal end, and wherein the lumen at the proximal end is crimped closed.

39. The needle assembly of claim 37 wherein the mechanical interlock is a flattened crimped section of the needle cannula.

40. The needle assembly of claim 37 wherein the mechanical interlock is a ribbed section of the needle cannula.

41. The needle assembly of claim 37 wherein the mechanical interlock is a threaded section of the needle cannula.

42. The needle assembly of claim 37 wherein the mechanical interlock is a split section of the needle cannula.

43. The needle assembly of claim 37 wherein the mechanical interlock is a fenestrated section of the needle cannula.

44. A method of forming a needle assembly comprising:
providing a needle cannula having a distal end and a proximal end; and
forming a mechanical interlock at the proximal end of the needle cannula.

45. The method of claim 44 further comprising inserting the cannula into a needle hub body, such that the cannula is positioned in snug sliding engagement with a neck of the needle hub body.

46. The method of claim 45 in which forming the mechanical interlock includes forming a seal within the cannula.

47. The method of claim 46 in which the seal is formed by crimping the needle cannula.

48. The method of claim 46 in which the seal is formed by inserting a plug in the needle cannula.

49. The method of claim 48 in which forming the mechanical interlock includes forming at least one of a hook shape, fenestrations, ribs, threads, or a roughened surface of a split in at least a portion of the needle cannula.

50. The method of claim 44 further comprising:

forming the mechanical interlock by forming a hook shape including positioning the needle cannula between a die and a pin, controlling the motion of the die and the pin such that the needle cannula is compressed between the die and pin, thereby forming a seal and the hook shape;

displacing the cannula distally such that the hook-shaped proximal end is disposed within the needle hub;

inserting glue into the needle hub; and

curing the glue.